What is claimed is:

1.   A user interface for creation and editing of a function block diagram in a controller configuration system, comprising:

a function block diagram representation; and

one of a feedback loop indicia, a wire connector cross-reference indicia, a pin datatype indicia, a wiring error indicia, a correct wiring indicia, a free-form text box, a configuration error indicia, a block execution status information indicia, and a wired block parameter indicia;

wherein the interface allows a user to modify the function block diagram representation in the controller configuration system.

2.   The user interface of claim 1, wherein the feedback loop indicia comprises a localized feedback wire indicating the presence of a feedback loop in the function block diagram representation.

3.   The user interface of claim 1, wherein the wire connector cross-reference indicia provides an indication proximate a wire connector in the function block diagram representation of a connection associated with the wire connector.

4.   The user interface of claim 3, wherein the wire connector cross-reference indicia provides a hyperlink to the connection associated with the wire connector in the function block diagram representation.

5.   The user interface of claim 3, wherein the connector cross-reference indicia provides an indication proximate a wire connector in the function block diagram representation of a plurality of connections associated with the wire connector.

6.   The user interface of claim 5, wherein the wire connector cross-reference indicia provides a plurality of hyperlinks to the plurality of connections associated with the wire connector in the function block diagram representation.

7.   The user interface of claim 1, wherein the pin datatype indicia provides an indication of whether a datatype associated with a function block pin is one of boolean, non-boolean, or unknown in the function block diagram representation.

8.   The user interface of claim 1, wherein the wiring error indicia provides an indication that a user is attempting to make an improper wiring connection to a function block in the function block diagram representation.

9.   The user interface of claim 8, wherein the improper wiring connection comprises connection of a wire of a first data type to a pin of a second datatype, wherein the first and second datatypes are incompatible.

10.   The user interface of claim 8, wherein the correct wiring indicia provides an indication that a user is attempting to make a proper wiring connection to a function block in the function block diagram representation.

11.   The user interface of claim 1, wherein the correct wiring indicia provides an indication that a user is attempting to make a proper wiring connection to a function block in the function block diagram representation.

12.   The user interface of claim 1, wherein the free-form text box comprises one of text, an OLE object, a control, a faceplate, HTML tagged text, and a link in the function block diagram representation.

13.   The user interface of claim 1, wherein the configuration error indicia comprises an indication proximate a function block diagram element in the function block diagram representation indicating that the function block diagram element cannot be verified as currently configured.

14. The user interface of claim 1, wherein the block execution status information indicia comprises an indication of a status condition associated with a function block in the function block diagram representation.

15. The user interface of claim 14, wherein the block execution status information indicia comprises an indication in a properties page associated with the function block.

16. The user interface of claim 1, wherein the wired block parameter indicia comprises an indication in a properties page associated with a function block that a parameter associated with the block is wired to a value source in the function block diagram representation.

17. The user interface of claim 16, wherein the indication in the properties page provides an indication to a user that a value for the parameter may not be set manually in the user interface.

18. A controller configuration system for creating and editing a function block diagram, comprising:

a user interface allowing a user to create and edit a function block diagram, the user interface comprising:

a function block diagram representation; and

one of a feedback loop indicia, a wire connector cross-reference indicia, a pin datatype indicia, a wiring error indicia, a correct wiring indicia, a free-form text box, a configuration error indicia, a block execution status information indicia, and a wired block parameter indicia.

19. The controller configuration system of claim 18, wherein the feedback loop indicia comprises a localized feedback wire indicating the presence of a feedback loop in the function block diagram representation.

20. The controller configuration system of claim 18, wherein the wire connector cross-reference indicia provides an indication proximate a wire connector in the function block diagram representation of a connection associated with the wire connector.

21. The controller configuration system of claim 20, wherein the wire connector cross-reference indicia provides a hyperlink to the connection associated with the wire connector in the function block diagram representation.

22. The controller configuration system of claim 20, wherein the connector cross-reference indicia provides an indication proximate a wire connector in the function block diagram representation of a plurality of connections associated with the wire connector.

23. The controller configuration system of claim 22, wherein the wire connector cross-reference indicia provides a plurality of hyperlinks to the plurality of connections associated with the wire connector in the function block diagram representation.

24. The controller configuration system of claim 18, wherein the pin datatype indicia provides an indication of whether a datatype associated with a function block pin is one of boolean, non-boolean, or unknown in the function block diagram representation.

25. The controller configuration system of claim 18, wherein the wiring error indicia provides an indication that a user is attempting to make an improper wiring connection to a function block in the function block diagram representation.

26. The controller configuration system of claim 25, wherein the improper wiring connection comprises connection of a wire of a first data type to a pin of a second datatype, wherein the first and second datatypes are incompatible.

27.   The controller configuration system of claim 25, wherein the correct wiring indicia provides an indication that a user is attempting to make a proper wiring connection to a function block in the function block diagram representation.

28.   The controller configuration system of claim 18, wherein the correct wiring indicia provides an indication that a user is attempting to make a proper wiring connection to a function block in the function block diagram representation.

29.   The controller configuration system of claim 18, wherein the free-form text box comprises one of text, an OLE object, a control, a faceplate, HTML tagged text, and a link in the function block diagram representation.

30.   The controller configuration system of claim 18, wherein the configuration error indicia comprises an indication proximate a function block in the function block diagram representation indicating that the function block cannot be verified as currently configured.

31.   The controller configuration system of claim 18, wherein the block execution status information indicia comprises an indication of a status condition associated with a function block in the function block diagram representation.

32.   The controller configuration system of claim 31, wherein the block execution status information indicia comprises an indication in a properties page associated with the function block.

33.   The controller configuration system of claim 18, wherein the wired block parameter indicia comprises an indication in a properties page associated with a function block that a parameter associated with the block is wired to a value source in the function block diagram representation.

34. The controller configuration system of claim 33, wherein the indication in the properties page provides an indication to a user that a value for the parameter may not be set manually in the user interface.

35. A user interface for creation and editing of a function block diagram in a controller configuration system, comprising:

an image boundary in which a user may locate function block diagram elements in creating and editing the function block diagram; and

a sheet boundary, wherein function block diagram elements within the sheet boundary are rendered as a unitary output item when the controller configuration system generates an output representation of the function block diagram;

wherein the image boundary is within the sheet boundary.

36. The user interface of claim 35, wherein the output representation is a printout of the function block diagram and wherein the output item is a printed page rendering of function block diagram elements within the sheet boundary.

37. The user interface of claim 36, wherein the function block diagram comprises a plurality of sheets having corresponding sheet boundaries and image boundaries.

38. The user interface of claim 35, wherein the function block diagram comprises a plurality of sheets having corresponding sheet boundaries and image boundaries.

39. The user interface of claim 35, wherein the function block diagram elements comprise at least one of function blocks, wires, input references, and output references.

40. The user interface of claim 35, wherein the user may place and move function block diagram elements only within the sheet boundary.

41.   The user interface of claim 35, wherein a user may move the sheet boundary from a first sheet location covering a first sheet area to a second sheet location covering a second sheet area in the user interface, and wherein the user interface is adapted to move the image boundary from a first image location within the first sheet location to a second image location within the second sheet location.

42.   The user interface of claim 41, wherein a first set of function block diagram elements in the function block diagram are located within the first sheet area and outside the second sheet area, and wherein the user interface is adapted to relocate the first set of function block diagram elements to be within the second sheet area.

43.   The user interface of claim 42, wherein the user interface is adapted to maintain associations between the function block diagram elements in the function block diagram in relocating the first set of function block diagram elements.

44.   The user interface of claim 42, wherein the user interface is adapted to store the location of the first set of function block diagram elements within the first sheet area as a default location for the first set of function block diagram elements, and to store the location of the first set of function block diagram elements within in the second sheet area as a pseudo location for the first set of function block diagram elements.

45.   The user interface of claim 44, wherein a user may move the sheet boundary from the second sheet location to the first sheet location, and wherein the user interface is adapted to move the image boundary from the second image location to the first image location and to restore the default location for the first set of function block diagram elements.

46.   The user interface of claim 44, wherein the user interface is adapted to store the location of the first set of function block diagram elements within the second sheet area as the default location for the first set of function block diagram elements if a

user moves, adds, or deletes a function block diagram element in the function block diagram.

47. A user interface for creation and editing of a function block diagram in a controller configuration system, comprising:

an input wire connector having an input wire name associated therewith; and

an output wire connector having an output wire name associated therewith;

wherein the user interface is adapted to establish an association between a first function block diagram element connected to the input wire connector and a second function block diagram element connected to the output wire connector if the input wire name and the output wire name are the same.

48. The user interface of claim 47:

wherein a user may create the input wire name associated with the input wire connector; and

wherein the user interface is adapted to indicate to the user output wire names associated with output wire connectors available for association with the input wire connector;

whereby the user may select an output wire name for use as the input wire name in order to associate the input wire connector with a desired output wire connector.

49. The user interface of claim 47:

wherein a user may create the output wire name associated with the output wire connector; and

wherein the user interface is adapted to indicate to the user input wire names associated with input wire connectors available for association with the output wire connector;

whereby the user may select an input wire name for use as the output wire name in order to associate the output wire connector with a desired input wire connector.

50. The user interface of claim 49, wherein input wire names associated with input wire connectors already associated with another output wire connector are not indicated to the user, whereby the user is prevented from inadvertently associating an input with more than one output.

51. A user interface for creation and editing of a function block diagram in a controller configuration system, comprising:

a block tag indicia associated with a function block in the function block diagram; and

a block tag name associated with the block tag;

wherein the user interface is adapted to indicate the block tag name proximate the function block in the function block diagram.

52. The user interface of claim 51, wherein the user interface is adapted to create a block tag and a block tag name for each function block as function blocks are added to the function block diagram.

53. The user interface of claim 52, wherein the block tag name created by the user interface for each function block is unique within the function block diagram.

54. The user interface of claim 53, wherein the user interface allows a user to manually create a block tag name for a function block in the function block diagram.

55. The user interface of claim 54, wherein the user interface is adapted to determine whether the block tag name created by the user is unique within the function block diagram, and to indicate an overlap error to the user if the block tag name is not unique within the function block diagram.

56. The user interface of claim 51, wherein the user interface allows a user to manually create a block tag name for a function block in the function block diagram.

57. The user interface of claim 56, wherein the user interface is adapted to determine whether the block tag name created by the user is unique within the function block diagram, and to indicate an overlap error to the user if the block tag name is not unique within the function block diagram.

58. A user interface for creation and editing of a function block diagram in a controller configuration system, comprising:

an intelligent deletion and restoration component allowing a user to selectively delete and restore function block diagram elements in the function block diagram;

wherein the intelligent deletion and restoration component is adapted to allow a user to delete a function block in the function block diagram, and to automatically delete one or more wires associated with a deleted function block in the function block diagram.

59. The user interface of claim 58, wherein the user interface is adapted to allow the user to restore the deleted function block to the function block diagram, and to automatically restore the one or more deleted wires associated with the restored function block in the function block diagram.

60. A user interface for creation and editing of a function block diagram in a controller configuration system, comprising:

a first function block having configuration information associated therewith;

wherein the user interface is adapted to allow a user to copy the first function block to create a new function block; and

wherein the user interface is adapted to automatically copy the configuration information associated with the first function block, and to associate the copied configuration information with the new function block.

61. The user interface of claim 60, wherein the configuration information comprises at least one of a block tag, pin visibility information, and a default parameter value.

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62.   A user interface for creation and editing of a function block diagram in a controller configuration system, comprising:

a function block having a function block type associated therewith in the function block diagram;

wherein the user interface is adapted to allow the user to change the function block type associated with the function block.

63.   The user interface of claim 62, wherein the user interface is adapted to preserve wires connected to the function block when the user changes the function block type associated with the function block.

64.   A user interface for creation and editing of a function block diagram in a controller configuration system, comprising:

an error message indicia providing an indication to a user that an error condition related to the function block diagram exists;

wherein the user interface is adapted to allow a user to select the error message indicia, and to automatically render a function block diagram element associated with the selected error condition to the user.

65.   The user interface of claim 64, wherein the user interface is adapted to navigate to a function block associated with the selected error condition when the user selects the error message.